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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,425	09/24/2003	Ashok N. Mathur	06328P USA	4239

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AIR PRODUCTS AND CHEMICALS, INC.  
PATENT DEPARTMENT  
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EXAMINER

SHAW, ELIZABETH ANNE

ART UNIT	PAPER NUMBER
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3644

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/669,425

Applicant(s)

MATHUR ET AL.

Examiner

Elizabeth A. Shaw

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-17 is/are allowed.
- 6) ☒ Claim(s) 1-14, 18-22 and 24-28 is/are rejected.
- 7) ☒ Claim(s) 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>812/04</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 18, 19 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Hunt (4,972,801). Hunt shows a containment vessel 11 for aquafarming marine animals comprising at least one aeration device 68 and an aqueous medium 18 having a top surface, within the containment vessel; the aeration device 68 move the aqueous solution via bubbles 69 to form at least one circular vortex 24 comprising the movement of at least the majority of the aqueous medium 18 in the vortex and is parallel to the top surface of the aqueous medium. The containment vessel 11 having a bottom 17 sloped to allow the collection of waste and sludge in an area less than 20% of the bottom. The aeration devices 68 are located across the radius of the containment vessel 11, see fig. 1.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4-7, 11-14 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sevic (5,893,337) in view of Shaar (5,839,391). Sevic shows an aquafarming system for shrimp comprising a containment vessel or pond containing a plurality of marine animals and an aqueous medium, a sensor for measuring the content of dissolved oxygen within the aqueous medium and an ozonizer for creating ozone and for dissolving the ozone into the aqueous medium through injection, see col. 2, lines 34-52 to increase the dissolved oxygen content and to maintain the dissolved oxygen content to more than 5/mg per liter. It is considered that the ozonizer is located within the containment vessel sufficiently to inject the ozone into the medium. Also, though not shown, it is considered that a central processing unit is present and in electrical communication with the sensors, see col. 3, lines 20-28 to indicate levels of oxygen content in the containment vessel and remotely activate the ozonizer generators, the generators, though notably used prior to feeding times are capable of activation at any time of the day, see col. 3, lines 28-31. Sevic teaches that both the vacuum swing absorption generator and pressure swing generator are known and the use of either generator to provide oxygen would be beneficial, see col. 3, lines 54-60. Sevic does not disclose the purity of the oxygen. Shaar discloses a system and method of use capable of providing oxygen having a purity of 60% or greater for aquafarming marine animal specifically shrimp comprising a containment vessel 30, 50 capable of containing a plurality of marine animals and an aqueous medium, at least one oxygen injector 5, 6, 6A disposed within at least one location in the containment vessel 30, 50; an oxygen generator/ozone source (pump system 2 in use with the teaching of col. 4, lines 40-47)

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in fluid communication with the oxygen injector 5, 6, 6A to increase the dissolved oxygen within the aqueous medium and a food source 3 in fluid communication with the oxygen injector 5, 6, 6A.

With respect to claim 1, to use a plurality or multiples of the aquafarming system of Sevic would have been obvious to one skilled in the art in order to increase the capacity of the farm. Further, with respect to claim 1 to use the purity of oxygen as shown by Shaar with the farm of Sevic would have been obvious to one skilled in the art in order to provide the most beneficial living conditions.

With respect to claims 6 and 11, to use the vacuum swing absorption generator of Sevic with the system of Shaar would have been obvious to one skilled in the art in order to achieve a greater percentage by volume of oxygen.

With respect to claims 12 and 13, to use the timer control and sensors of Sevic with the system of Shaar would have been obvious to one skilled in the art in order to control the generators output to activate them at a time when it is most efficient and necessary, such as lower oxygen levels observed at night.

With respect to claim 14, to allow the biomass of the shrimp to be at least 0.5 kg/m<sup>2</sup> or greater in the system of Shaar as taught by Sevic, see col. 1, lines 58-60, would have been obvious to one skilled in the art to have maintained the biomass density of the marine animals within the containment vessel at any given density which would result in the maximum operability of the containment vessel and still ensure the health of the marine animals.

With respect to claim 25, in the range noted of between 0.25 and 8, one containment vessel with an oxygen generator present is obvious in the combination of Sevic and Shaar.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sevic in view of Shaar as applied to claim 1 above and further in view of Woltman (5,014,647). The combination Sevic and Shaar do not disclose a medicine source in fluid communication with an oxygen injector. Woltman teaches an aquafarming system having a medicine source 10 in communication with oxygen injectors/aspirators, col. 2, lines 25-28. With respect to claim 3, to use a medicine source of Woltman with the system of the combination of Sevic and Shaar, would have been obvious to one skilled in the art to having added a in order to assist in maintaining the health of the marine animals.

Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sevic in view of Shaar as applied to claim 1 above and further in view of Kajisono. The combination of Sevic and Shaar do not disclose an oxygen generator being mounted on wheels or floatable support. Kajisono teaches a water purifier apparatus 40 mounted on a floatable support 11. With respect to claims 8-10, to make the oxygen generator of the combination of Sevic and Shaar portable as shown by Kajisono would have been obvious to one skilled in the art in order to ensure circulation of purified, oxygenated, or other fortified water to all portions of the animal containment unit, particularly if the unit is shaped irregularly. Further it has been held that making an old device portable or

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movable without producing any new and unexpected result involves only routine skill in the art.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt in view of Ido (6,357,392). Hunt does not disclose the exact flow rate of the aqueous medium. Ido teaches the use of pumps causing a current flow of 5 to 20 cm/sec, see col. 14, lines 1-4. With respect to claims 20 and 21 to move the aqueous medium at a flow rate of between 4 and 20 cm/sec as taught by Ido in the system of Hunt would have been obvious to one skilled in the art in order to provide enough aqueous medium movement to be closer to the conditions of the sea and to allow for full aeration, the drift of the animals and to move the waste or sludge from the general living area to the bottom.

Claims 24, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sevic in view of Shaar as applied to claim 1 above and further in view of Hunt. The combination of Sevic and Shaar do not disclose a circular vortex. With respect to claim 24, to use the vortex method of circulation as taught by Hunt with the system of Sevic and Shaar would have been obvious to one skilled in the art in order to thoroughly mingle the water in the container to completely distribute the oxygen.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination Sevic and Shaar as applied to claim 1 above and further in view of Ido. The combination of Sevic and Shaar do not teach the rate of speed of the aqueous medium. Ido teaches the use of pumps causing a current flow of 5 to 20 cm/sec, see col. 14, lines 1-4. With respect to claim 26, to use the teaching of Ido with the system

of the combination of Sevic and Shaar would have been obvious to one skilled in the art in order to provide enough aqueous medium movement to be closer to the conditions of the sea and to allow for full aeration, the drift of the animals and to move the waste or sludge from the general living area to the bottom.

***Allowable Subject Matter***

Claims 15-17 are allowed.

Claim 23 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant's arguments with respect to claims 1-14 and 18-28 have been considered but are moot in view of the new ground(s) of rejection.

***Election/Restrictions***

The restriction of June 10, 2005 has been withdrawn.

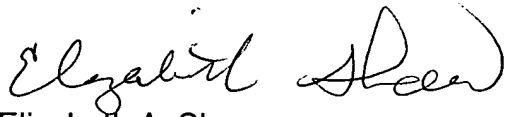
***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Included for further reference are: Kalbskopf (3,704,009), Inslee et al (5,046,451), Weis et al (5,118,415), Englebart (5,158,037) and Renshaw (2005/0013700) .


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Shaw whose telephone number is 571-272-6908. The examiner can normally be reached on M-Th 10:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Elizabeth A. Shaw  
Examiner  
Art Unit 3644

September 29, 2005

  
MICHAEL J. CARONE  
SUPERVISORY PATENT EXAMINER